

JUN 2 1961

CRPL-F201 PART B

Reference taken from the original. FOR OFFICIAL USE

PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
MAY 1961

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

SOLAR - GEOPHYSICAL DATA

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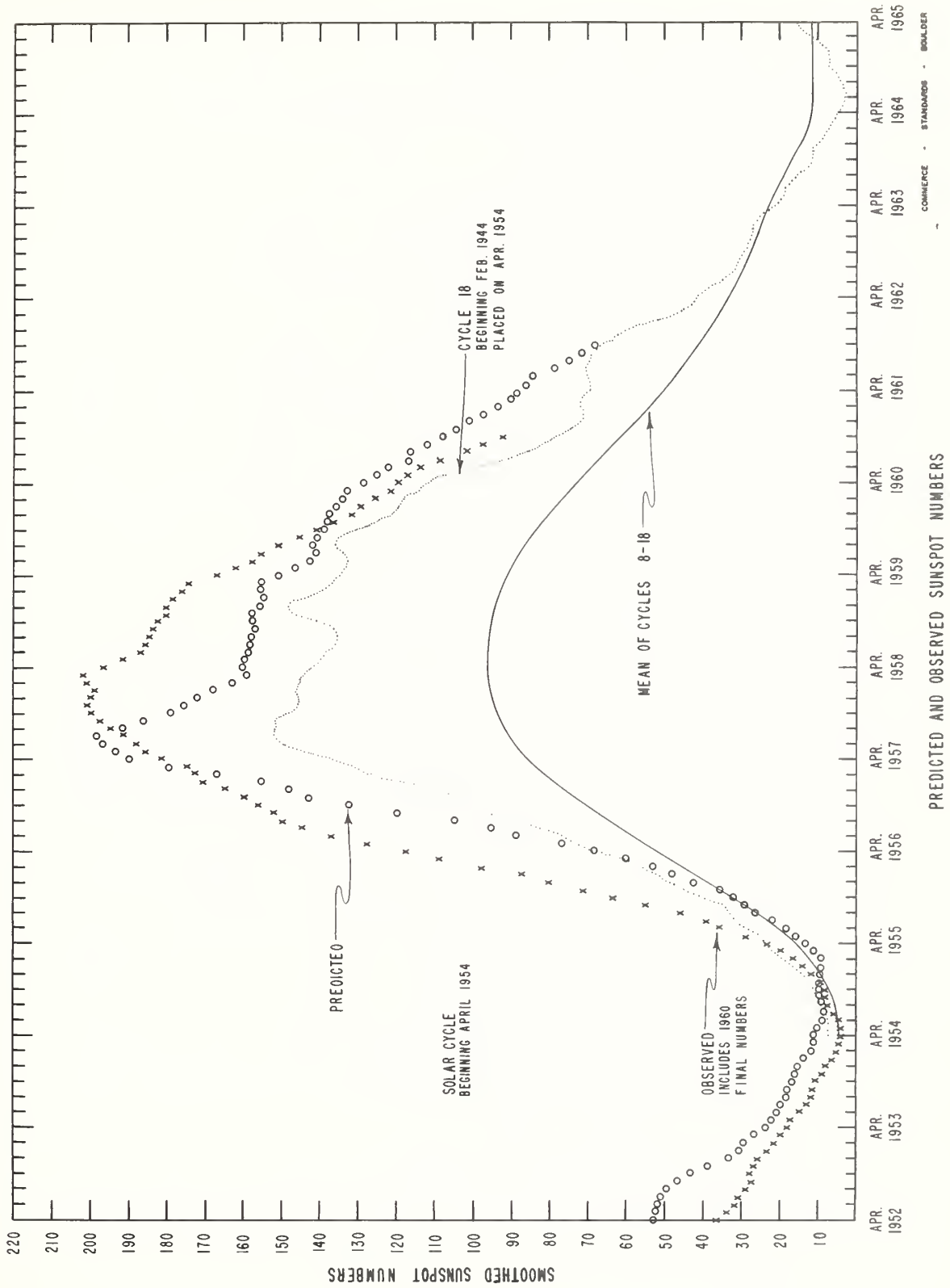
VIII ALERT PERIODS AND SPECIAL WORLD INTERVALS

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The descriptive text was published separately, November 1960.

Mar. 1961	American Relative Sunspot Numbers R_A
1	12
2	22
3	33
4	24
5	28
6	31
7	33
8	41
9	33
10	20
11	17
12	13
13	18
14	44
15	40
16	55
17	52
18	39
19	31
20	33
21	50
22	53
23	60
24	71
25	67
26	70
27	70
28	85
29	90
30	102
31	98
Mean:	46.3

Apr. 1961	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	87	113
2	60	105
3	55	101
4	73	103
5	86	107
6	82	106
7	64	98
8	66	104
9	49	96
10	48	93
11	47	92
12	42	89
13	40	88
14	41	93
15	53	98
16	60	103
17	78	105
18	72	107
19	65	105
20	56	103
21	52	104
22	47	103
23	41	105
24	36	111
25	48	111
26	60	126
27	82	120
28	74	114
29	92	121
30	99	122
Mean:	61.8	104.9



CALCIUM PLAGE AND SUNSPOT REGIONS

APRIL 1961

CMP Apr. 1961	Lat	McMath Plage Number	Return of Region	Calcium Plage Data			Sunspot Data		
				CMP Values Area Int.		History, Age	CMP Values Area Count		History
01.8	S19	6071	New	2200	3	$\ell - \ell$ 1	210	1	$\ell - \ell$
02.6	N11	6070	6049	1200	2	$\ell \setminus \ell$ 3			
03.4	S15	6074	6048	3200	3	$\ell - \ell$ 2	70	3	ℓ / ℓ
04.3	N17	6076	New	(200)	(1)	$\ell \setminus d$ 1			
04.6	N02	6075	6051	1200	2	$\ell - \ell$ 3			
06.1	N16	6077	New	1700	3	b / ℓ 1	290	15	b / ℓ
07.4	S20	6081	6053	500	1.5	b / ℓ 3			
08.3	N13	6078	New	400	1	$\ell - \ell$ 1			
09.2	S04	6079	6054	800	2	$\ell - \ell$ 4	100	1	$\ell - \ell$
10.9	S05	6080	6054	1300	2	$\ell \setminus \ell$ 4			
14.0	N04	6082	6062	1800	3	$\ell \setminus \ell$ 2	20	1	b / ℓ
14.2	N17	6083	6062	1100	2.5	$\ell - \ell$ 2			
15.2	S26	6088	6058	1200	3	$\ell - \ell$ 2	40	3	$b \wedge d$
15.4	N08	6084	6059	500	2	$\ell - \ell$ 2			
16.6	S07	6085	New	300	2.5	$\ell \setminus d$ 1			
16.7	N12	6086	New	1400	3	ℓ / ℓ 1	190	10	$\ell \setminus \ell$
17.6	N02	6087	New	1200	2.5	$\ell - \ell$ 1	220	1	$\ell \setminus d$
19.0	S13	6089	6060	900	2	$\ell \setminus \ell$ 3	10	1	$b \wedge d$
21.6	N30	6090	6063	900	2.5	$\ell \setminus \ell$ 5			
22.8	S11	6091	6067	3000	3	$\ell \setminus \ell$ 3	20	1	$\ell \setminus d$
22.9	N08	6092	*	2800	3	$\ell \setminus \ell$ 2	210	1	$\ell - \ell$
27.5	S14	6093	6069	1300	2	$\ell - \ell$ 2			
27.7	N05	6094	New	400	2	$\ell - \ell$ 1			
29.3	S07	6096	New	700	3	$\ell - \ell$ 1			
30.4	N05	6097	New	2000	3	ℓ / ℓ 1	490	11	b / ℓ
30.7	S13	6098	6074	8200	3	$\ell - \ell$ 3	400	10	$\ell \setminus \ell$

*6065, 6066, 6068.

COMMERCE - STANDARDS - BOULDER

Correction for March plage table: Region 6048 is New instead of return of 6023.

PROVISIONAL CORONAL LINE EMISSION INDICES

APRIL 1961

CMP Apr 1961	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁
1	x	x	x	x	x	x	x	x	x	84	119	x	x	35	x	x
2	x	x	x	x	x	x	x	x	x	x	x	x	x	46	x	18
3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	44	57	7	14	29	58	7	15	x	x	x	x	x	x	x	x
5	42a	64a	x	x	25a	53a	x	x	x	13	20	6	7	64	15	30
6	21	22	x	x	11	18	x	x	x	10	14	6	7	52	11	28
7	x	x	x	x	x	x	x	x	x	x	x	x	x	34	x	x
8	32	65	7	9	15	21	6	14	x	17	21	13	19	24	3	12
9	24	32	12	15	27	71	14	28	x	20	23	9	17	23	10	14
10	20	31	8	11	30	80	9	20	x	x	x	x	x	x	x	x
11	16	20	9	13	28	53	9	22	x	x	x	x	x	x	x	x
12	17	24	30	61	14	26	13	15	9a	12a	x	x	x	37a	x	x
13	x	x	x	x	x	x	x	x	x	x	x	x	x	60a	x	x
14	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15	x	x	x	x	x	x	x	x	41	64	x	x	x	123	x	x
16	56	90	11	22	29	52	6	8	x	x	x	x	x	x	x	x
17	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	49	69	x	8	11	41	8	10
19	37	47	6	7	39	49	5	6	x	x	x	x	x	x	x	x
20	47	60	4	5	60	70	5	8	56	91	x	x	x	61	x	x
21	x	x	x	x	x	x	x	x	56	104	x	x	x	48	x	x
22	93	120	12	25	56	87	15	23	56a	96a	13a	20a	x	87a	14a	18a
23	58	81	10	16	59	126	12	25	x	x	x	x	x	x	x	x
24	58	90	x	x	32	44	x	x	19	25	x	x	x	31	x	x
25	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
26	32	36	x	x	26	31	x	x	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
29	50	73	x	x	98	162	x	x	x	x	x	x	x	x	x	x
30	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

x = no observations

a = index computed from low weight data

* = yellow line observed

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

APRIL 1961

OBSERVATORY	DATE	OBSERVED		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME		MEASUREMENTS		PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. LONG. DIST.				UT	UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	
{ WENDEL STOCKHOLM	01	0816 E	0827 D	S12 W12	6069	11 D	1				3.00		
	01	1116 E	1150 D	S12 W13	6069	34 D	1+				6.00		
	01	1119 E	1143 D	S10 W12	6069	24 D	1	3	1122		2.00	2.10	
{ WENDEL SAC PEAK	03	1711	1725 D	S11 W42	6069	14 D	1+				6.00		
	04	0743 E	0755 D	N12 E27	6077	12 D	1				3.00		
	04	1349	1400	N13 E23	6077	11	1				3.00		
{ WENDEL SAC PEAK	04	1400 E	1413	S11 W54	6069	13 D	1	3		1.90		2.48	23
	04	1400	1416	S13 W50	6069	16	1				3.00		
	04	1414	1438	N13 E23	6077	24	1				4.00		
{ WENDEL SAC PEAK	04	1648	1726	S08 W26	6074	38	1	3		2.06	2.08		22
	04	2233	2306	N14 E17	6077	33	1	2	2240	2.00	2.00		30
	05	0717	0735	N13 E15	6077	18	1				3.00		
{ ONDRÉJOV WENDEL	05	0829 E	0850	N13 E14	6077	21 D	1	3	0830			2.40	
	05	0830	0909	N13 E13	6077	39	1+				7.00		
	05	0840 E	0850	N12 E12	6077	10 D	1	2		2.00		2.50	
{ SCHAUINS WENDEL	05	1117	1230	N13 E10	6077	73	1+				6.00		
	05	1222	1242	N13 E08	6077	20	1	3	1225	2.00		2.20	
	05	1335	1435	N13 E18	6077	60	1	2	1353			3.30	
{ HUANCAYO WENDEL	05	1341	1423	N13 E11	6077	42	1+				5.00		
	05	1555	1647	N13 E08	6077	52	1+				5.00		
	05	1556	1635	N12 E19	6077	39	1	2	1600	1.40	1.50		
{ HUANCAYO SAC PEAK	05	1556	1635	N12 E19	6077	39	1	2	1625	2.30	2.50		
	05	2051	2149	N12 E03	6077	58	1	1		2.17		2.17	26
	06	0716	0726	N14 W07	6077	10	1+	3	0719			4.40	
{ ONDRÉJOV WENDEL	06	0716	0726	N14 W08	6077	10	1				4.00		
	06	0915 E	0945	N13 E01	6077	30 D	1				3.00		
	06	1114	1135	N13 W01	6077	21	1				4.00		
{ WENDEL HUANCAYO	06	1318 E	1405	N13 W04	6077	47 D	2				10.00		
	06	1350	1359	N13 W04	6077	9	1	2	1355	2.30		2.40	
	06	1423	1440	N14 W04	6077	17	1				3.00		
{ WENDEL SAC PEAK	06	2131	2223	N13 W09	6077	52	1	2		4.39	4.39		26
	06	2144 E	2153 D	N13 W08	6077	9 D	1	1	2144	4.40	4.60		
	06	2144 E	2153 D	N13 W08	6077	9 D	1	1				2.40	
{ ONDRÉJOV WENDEL	07	1001 E	1024	N14 W16	6077	23 D	1+	3	1002			2.50	
	08	1034 E	1051	N14 W26	6077	17 D	1	1	1039			1.07	
	08	1050	1130	N05 E35	6080	40	1						
{ SAC PEAK SAC PEAK WENDEL	09	1356	1417	S09 W90	6074	21	1	3		.72	3.61		17
	09	1502	1510	S09 W90	6074	8	1	3		.97	4.89		20
	09	1532	1541	N13 W41	6077	9	1				3.00		
{ WENDEL ONDRÉJOV	10	0833	0859	N13 W57	6077	26	1+				5.00		
	13	0605 E	0615	N12 W90	6077	10 D	1+	3	0605			4.00	
	20	0022	0100	S12 E30	6091	38	1	1	0036	2.00	2.10		10

COMMERCE STANDARDS - BOULDER

SOLAR FLARES

APRIL 1961

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM. POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX.	M-PLATE	TIME				MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH He	MAX. INT. °		
	APR 1961														
WENDEL	22	0531	E	0553	S14	E02	6091	22	D	1		4.00			
	23	2017	2032	2025	S12	E90	6098	15		1	2025	2.50		10	
{	LOCKHEED	24	0035	0145	S12	E90	6098	70		1	0050	2.50		10	
	LOCKHEED	24	0035	0145	S12	E90	6098	70		1	0050	2.50		10	
	LOCKHEED	24	2228	2300	S07	E75	6098	32		1	2233	2.30		20	
	LOCKHEED	25	1211	E	1235	S07	E71	6098	24	D	1		4.00		
{	LOCKHEED	25	2003	2030	S11	E64	6098	27		1	2010	2.00		10	
	SAC PEAK	25	2008	2018	S11	E65	6098	10		1	2012	1.32	2.12	17	
{	LOCKHEED	25	2052	2120	S13	E69	6098	28		1	2059	1.90	3.40	20	
	SAC PEAK	25	2053	2120	S15	E68	6098	27		1	2059	1.32	2.29	16	
LOCKHEED	25	2343	0030	2347	S11	E62	6098	47		1	2347	1.80	2.80	10	
LOCKHEED	26	0116	0140	D	S06	E61	6098	24	D	1	0130	2.20	3.30	20	
	STOCKHOLM	26	1037	1240	D	S16	E57	6098	123	D	2	1127	3.50	7.00	
{	STOCKHOLM	26	1247	1334	D	S16	E57	6098	47	D	1	1310	1.50	3.00	
	SAC PEAK	26	1424	1627	U	S12	E55	6098	123	U	2	3	9.10	12.15	24
{	ONDREJOV	26	1604	E	S11	E56	6098	32	D	1	3	1617		2.10	
	SAC PEAK	26	1646	1920	U	S12	E55	6098	154	U	3		15.88	21.20	30
{	LOCKHEED	26	1648	1945	S11	E53	6098	177		2	1718	8.10	10.70	30	
	HUANCAYO	26	1755	E	S10	E52	6091	39	D	2+	1758	5.70	9.00		
WUANCAYO	26	2209	2222	2213	S08	E50	6098	13		1	2213	1.60	2.50		
KYOTO	27	0245	E	0310	S09	E50	6098	25	D	2	0250	16.50		120	
	STOCKHOLM	27	1224	1240	D	S07	E40	6098	16	D	1	1227	3.00	3.90	
KYOTO	28	0220	E	0240	D	S07	E35	6098	20	D	1	0225	3.09	4.00	110
	WENDEL	28	0646	0710	D	S09	E35	6098	24	D	1			2.20	
{	ONDREJOV	28	0649	E	0712	S10	E35	6098	23	D	1+	0653			
	CAPRI S	28	1201	1239	D	S05	E30	6098	38	D	1	1224	3.00	3.50	
{	STOCKHOLM	28	1202	E	S04	E25	6098	28	D	1	1220	3.50	3.90		
	WENDEL	28	1202	1237	S05	E30	6098	35		1+			8.00		
SAC PEAK	28	2250	2324	D	2256	S09	E23	6098	34	D	1	2.58	2.58	18	
KYOTO	30	0528	0533	D	S07	E05	6098	5	D	1	0528	2.06	1.42	100	

COMMERCE - STANDARDS - BOULDER

E = LESS THAN	CAPRI S	ANACAPRI - GERMAN	MCNATH	MCNATH-HULBERT
D = GREATER THAN	CAPRI S	ANACAPRI - SWEDISH	MOSCOM - G	MOSCOM - GAISH
U = APPROXIMATE	GOOD HOPE	ROYAL OBSERVATORY,	R O HERST	ROYAL GREENWICH OBSERVATORY,
□ = NOT REPORTED	KIEV*	KIEV UNIVERSITY	SAC PEAK	HERSTMONCEUX
	KODAIKANAL	KODAIKANAL	SACRAMENTO PEAK	SACRAMENTO PEAK
	KRASNYA	KRASNAYA PAKHRA	SCHAUNSLAND	SCHAUNSLAND
	LOCKHEED	LOS ANGELES	WENDEL	WENDELSTEIN

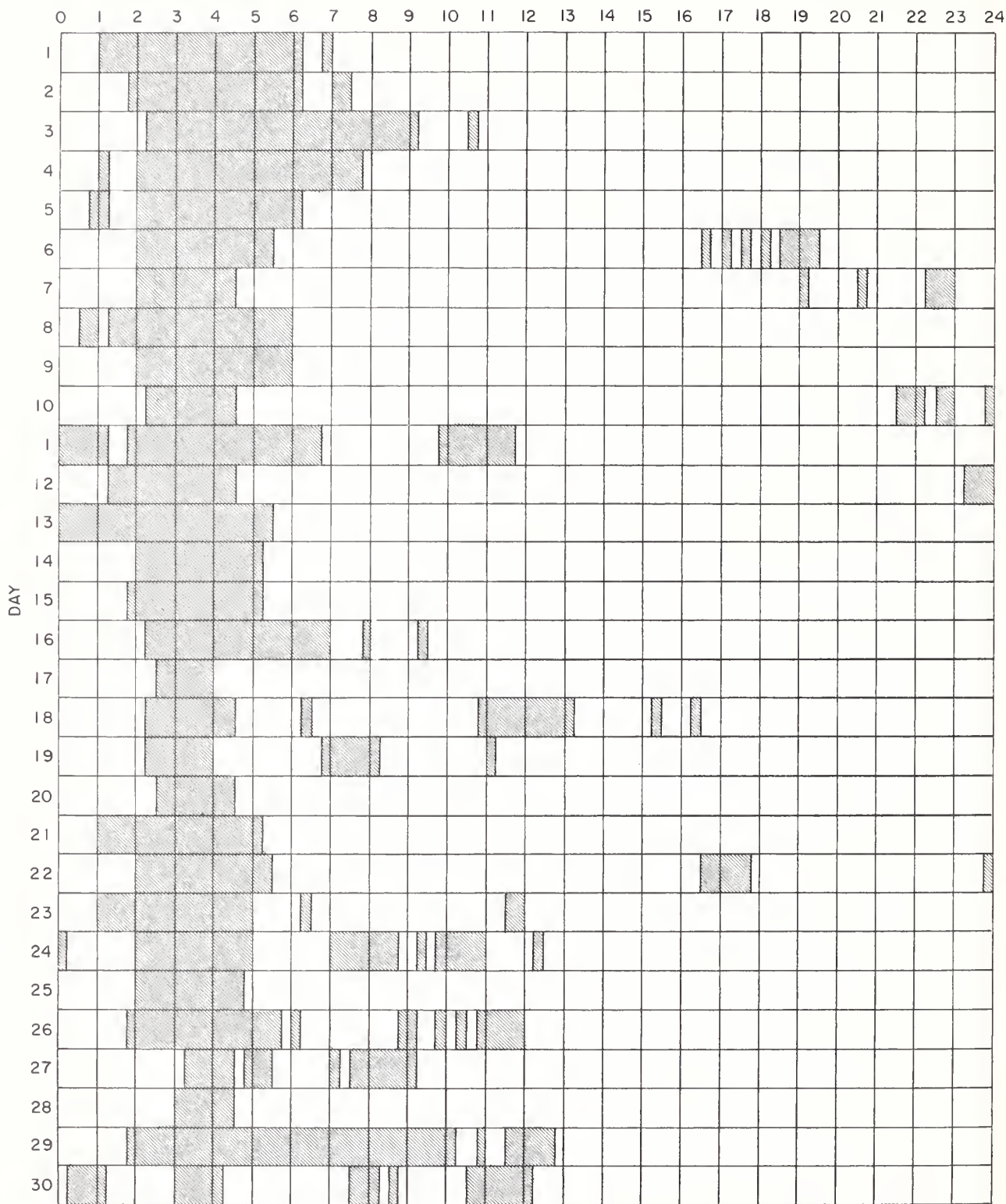
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1960 FOR DEFINITION OF CORR. AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SAC PEAK.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

APRIL 1961

HOUR-UT



Stations Include:

Arcetri	Huancayo	McMath-Hulbert	Royal Greenwich Observatory	Schauinsland
Climax	Kyoto	Meudon	Herstmonceux	Uccle
Hawaii	Lockheed	Ondrejov	Sacramento Peak	Wendelstein

COMMERCE - STANDARDS - BOULDER

SUBFLARES

Noted as follows: Date-Universal Time - Coordinates

MARCH 1961

LOCKHEED	02	0040 E	S12 W29	UCCLE	20	0827	N08 W15	SAC PEAK	27	1652 E	S15 E56
LOCKHEED	02	0040 E	N23 E03	UCCLE	20	1000	S13 E28	SAC PEAK	27	1714	N08 W11
SAC PEAK	02	1846	N07 E05	LOCKHEED	20	1805	N08 E13	HAWAII	27	1846 E	S15 E53
HAWAII	04	2334	S12 E39	LOCKHEED	20	1805	N08 E13	LOCKHEED	27	2108	N07 W13
UCCLE	05	1012	S09 E33	HAWAII	20	2044	N19 E78	SAC PEAK	27	2126	S17 E56
WENDEL	05	1309 E	S09 E30	MCMATH	20	2045	N21 E88	LOCKHEED	27	2206	N08 W13
CAPRI S	06	0854 E	N02 E13	LOCKHEED	20	2210	N21 E85	UCCLE	28	1228	S19 E81
ARCETRI	06	0856 E	N05 E14	SAC PEAK	20	2229	N09 E70	UCCLE	28	1230	S08 E75
UCCLE	06	1023	N22 W54	LOCKHEED	20	2229	N11 E72	SAC PEAK	28	1402 E	S19 E85
UCCLE	06	1342	N01 E13	HAWAII	20	2331	N21 E80	HUANCAYO	28	1420 E	S30 W50
WENDEL	07	0819 E	N05 W31	SAC PEAK	20	2336 E	N21 E79	CAPRI S	28	1420 E	S24 W52
UCCLE	07	0831 E	S12 W40	LOCKHEED	21	1830	N09 W05	CAPRI S	28	1443 E	S14 E44
UCCLE	07	0954	N22 W65	LOCKHEED	21	2008	N09 W05	SAC PEAK	28	1518	S16 E44
UCCLE	07	1353	N22 W68	LOCKHEED	21	2020	N08 E53	SAC PEAK	28	1654	S13 E42
WENDEL	07	1357 E	S09 E00	SAC PEAK	21	2020	N08 E53	SAC PEAK	28	1707	S08 E76
HAWAII	07	1854	S07 E90	STOCKHOLM	22	0850	N09 E51	SAC PEAK	28	1715	N12 E68
WENDEL	08	1123 E	N03 W20	HAWAII	22	1740 E	N10 F48	SAC PEAK	28	1835	S13 E41
UCCLE	08	1404	S10 E85	HAWAII	22	1846	N08 E46	HAWAII	28	1908	S16 E41
ARCETRI	09	0859 E	N05 W30	CLIMAX	22	1847	N08 E47	HUANCAYO	28	2006	S07 E78
SAC PEAK	09	2249	S07 E61	HAWAII	22	2100 E	N08 W17	HAWAII	28	2016	S10 E72
LOCKHEED	09	2250	S06 E62	LOCKHEED	22	2110	N09 E41	SAC PEAK	28	2108	S13 E39
UCCLE	10	1152	N06 W46	UCCLE	23	1044	S05 W27	HAWAII	28	2114	S15 E40
LOCKHEED	10	1720	S06 E50	HAWAII	23	1101	N05 W27	SAC PEAK	28	2140	S09 E73
MCMATH	10	1729	S08 E50	HAWAII	23	1842 E	N12 W08	HAWAII	28	2144 E	S11 E41
HAWAII	10	2012	S10 E52	HAWAII	23	2022 E	N08 W30	SAC PEAK	28	2214	S13 E36
LOCKHEED	10	2013	S06 E50	WENDEL	24	1313 E	N04 W43	SAC PEAK	28	2314	S16 E38
MCMATH	10	2017	S08 E50	HAWAII	24	1816 E	N04 W47	HAWAII	29	0108	N09 W23
LOCARNO	11	0945	S06 E42	HAWAII	24	1906 F	N04 W47	HAWAII	29	0127 E	S13 E37
LOCKHEED	11	1558 E	S07 E40	ARCETRI	25	0826 E	S05 W56	LOCARNO	29	0720 F	N06 W45
LOCKHEED	13	1827	N21 E53	WENDEL	25	1024 E	N03 W52	LOCARNO	29	0725	N06 W28
LOCKHEED	13	1927	N21 E53	WENDEL	25	1205 E	N03 W53	CAPRI S	29	0754 E	S11 E48
HAWAII	13	1934 E	N19 E54	SAC PEAK	25	1409 E	S15 E90	LOCARNO	29	0900	N06 W29
LOCKHEED	13	2048	N21 E53	SAC PEAK	25	1409 E	N04 W57	LOCARNO	29	1000	N06 W29
LOCKHEED	13	2105	N20 E53	SAC PEAK	25	1430	S20 E90	SAC PEAK	29	1422	S13 E30
LOCKHEED	13	2300	N22 W16	MCMATH	25	1438	S20 E90	SAC PEAK	29	1445	N08 W33
LOCKHEED	13	2343	N04 E70	SAC PEAK	25	1458	S15 E85	SAC PEAK	29	1641	S12 E25
HAWAII	13	2346	N01 E70	SAC PEAK	25	1545	S20 E90	LOCKHEED	29	1721	S12 E26
UCCLE	14	1007	N21 E45	MCMATH	25	1547	S20 E90	LOCKHEED	29	1742	N07 W36
UCCLF	14	1128	N31 E42	LOCKHEED	25	1612	S20 E90	LOCKHEED	29	1831	S11 E25
LOCKHEED	14	1722	N20 E42	LOCKHEED	25	1650	N02 W58	HAWAII	29	1832	S13 E25
SAC PEAK	14	2040	S03 W04	SAC PEAK	25	1657	N03 W60	SAC PEAK	29	1842	S12 F24
UCCLE	15	1237	N20 E30	SAC PEAK	25	1704	S20 E90	LOCKHEED	29	1951	S11 E24
UCCLE	15	1426	N23 W37	MCMATH	25	1705	S20 E90	HAWAII	29	1958	N10 W40
UCCLF	15	1456	N11 E70	ONDRE JOV	26	1001 E	N03 W68	LOCKHEED	29	1959	N09 W38
UCCLE	15	1515	N24 W30	WENDEL	26	1111 E	S12 E66	SAC PEAK	29	2003 E	N18 W38
UCCLE	15	1540	N03 E50	WENDEL	26	1120 E	N04 W68	LOCKHEED	29	2039	S11 E23
HAWAII	15	1754 E	S02 W17	ONDRE JOV	26	1155 E	S17 E73	HAWAII	29	2040	S13 E21
LOCKHEED	16	1915	N24 W51	LOCKHEED	26	1213	N02 W65	LOCKHEED	29	2107	S11 E22
HAWAII	16	2142	S25 E28	LOCKHEED	26	1559	N08 E08	LOCKHEED	29	2190	S11 E22
WENDEL	17	1048 E	N03 E15	LOCKHEED	26	1600	N05 W71	SAC PEAK	29	2233	S23 E38
WENDEL	17	1513 E	S24 E21	MCMATH	26	1604	N08 E88	HAWAII	29	2330	S12 E21
SAC PEAK	18	1605	N20 W14	HAWAII	26	1800 E	S20 E82	LOCKHEED	29	2330	S11 E23
LOCKHEED	18	1608	N21 W14	LOCKHEED	26	1825 U	S15 E65	LOCKHEED	30	0005	S11 E22
SAC PEAK	18	1739 E	N15 E04	LOCKHEED	26	1828	N02 W72	LOCKHEED	30	0023	N07 W39
HAWAII	18	1744 E	N04 E07	HAWAII	26	1830	S15 E66	HAWAII	30	0128	S13 E21
LOCKHEED	18	1814	N03 E08	HAWAII	26	2000 E	S21 E80	MCMATH	30	1608	N09 W54
LOCKHEED	18	1827	S24 E02	SAC PEAK	26	2042 E	S19 E80	HAWAII	30	1838	N07 W66
HAWAII	18	1842	S25 E07	LOCKHEED	26	2125	N09 W03	HUANCAYO	30	1958	N08 W50
LOCKHEED	18	1842	S25 E07	LOCKHEED	26	2157	S15 E65	HAWAII	30	2016	S17 E12
LOCKHEED	18	1907	S26 E03	SAC PEAK	26	2215 E	S14 E64	LOCARNO	30	2047	S07 E10
LOCKHEED	19	1920	N09 E25	HAWAII	27	0012	S11 E52	MCMATH	30	2047	S16 E11
LOCKHEED	19	2315	N07 W10	LOCKHEED	27	0014	S12 E53	HAWAII	30	2048	S17 E08
HAWAII	19	2330 E	N06 W09	CAPRI S	27	0835 E	N09 W80	HAWAII	30	2134	S20 E27
HAWAII	19	2350	S14 E31	UCCLE	27	1057	S04 E85	LOCKHEED	30	2135	S17 E26
				CAPRI S	27	1305 E	S15 E56	MCMATH	30	2137	S09 E26
				SAC PEAK	27	1359 E	S15 E57	LOCKHEED	30	2246	N07 W52
				HUANCAYO	27	1414	S16 E60	LOCKHEED	31	0035	S15 E11
				UCCLE	27	1518	N08 W08	HAWAII	31	0038	S17 E09
								LOCKHEED	31	0057	N09 W55
								SAC PEAK	31	1444	S10 W47
								SAC PEAK	31	1752	S09 W73
								HAWAII	31	1940	S12 W03
								SAC PEAK	31	2349	S18 W01

CONNERCE - ETANDARDS - BULLER

*Rated as flare of importance ≥ 1 by other observatories (See CRPL-P 200 Part B, for April 1961).

SOLAR FLARES

JANUARY 1961

OBSERVATORY	DATE	OBSERVED TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX PHASE	APPROX.					MC-MATH PLACE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH He	MAX. INT. f _o F ₂
					LAT.	MER DIST.										
{ MITAKA KYOTO VOROSHILOV MITAKA MITAKA TASHKENT TASHKENT TASHKENT	01	0121	0212	0140	N09 W40	5977	51	1	2	0134	1.57	2.72	2.27	118	S-SWF	
	01	0150	0213	D	N13 W03	5983	23	2	2	0150	5.16			120		
	01	0151	0205	0160	N16 E00	5983	14	1+	2		2.87			155		
	01	0200	0217	0202	N15 W01	5983	17	1	2	0202	2.95	3.01	2.81	120		
	01	0352	0404	0356	N15 W02	5983	12	1+	1	0355	2.95	3.10	4.98	176		
	01	0522	0546	0530	N15 W03	5983	24	1	1	0530	1.55	2.00				
	01	0558	0605	0600	N15 W03	5983	7	1	1	0600	.83	1.00				
	01	0737	0755	0742	N15 W04	5983	18	1	1	0742	2.37	2.00				
	{ VOROSHILOV MITAKA	02	0058	0106	0059	N16 W16	5983	8	1	3		1.89				78
		02	0116	0123	0119	N22 E61	5991	7	1	2	0116	1.28	2.89	2.17		107
02		0116	0131	0118	N20 E60	5991	15	1	3		1.53			73		
02		0538	0552	0544	N22 E59	5991	14	1	1	0544	.98	2.21	2.71	107		
{ KYOTO MEUDON GOOD HOPE	02	0552	0602		N16 W17	5983	10	1	1	0552	3.71			100		
	02	0830	0844	0833	N17 W17	5983	14	1								
	02	0836	0855	0840	N19 W18	5983	19	1		0840	2.80	3.10				
	02	0836	0855	D	N17 W19	5983	19	1	1	0840	3.15			87		
{ SIMEIZ GOOD HOPE GOOD HOPE	02	0913	0928	0914	N22 E58	5991	15	1		0914	1.50	3.00				
	02	1137	1209	1139	N22 E58	5991	32	1		1139	1.40	2.80				
	03	0025	0043	D	N16 W26	5983	18	2		0025	14.44		1.33	100		
	03	0224	0240	0225	S15 E36	5990	16	1	1	0225	1.67	2.10	2.06	115		
VOROSHILOV	04	0058	0112	0110	N19 W42	5983	14	1+	2		3.59			85		
	04	0206	0220	0208	N19 W42	5983	14	2			4.04			117		
KYOTO MEUDON MEUDON MEUDON	05	0130	0140	D	N12 W53	5983	10	1		0130	1.44			80		
	05	0835	0910	0842	N22 E17	5991	35	1								
	05	0936	0950	0937	N22 E17	5991	14	1	1							
	05	1143	1210	1146	N20 E15	5991	27	1+								
VOROSHILOV	05	1312	1335	1320	N20 E14	5991	23	1								
	06	0032	0050	0036	N24 E05	5991	18	1+	2		2.52			99		
MITAKA KYOTO	07	0041	0052	0046	N24 W05	5991	11	1	2	0047	1.67	1.75	1.76	120		
	07	0150	0155	D	N20 W18			1-	2	0150	1.44			80		
PIRCULI	07	0630	0737	D	S11 E62	5995	67	1	2	0728	2.28	5.29		61		
	08	0045	0106	D	N13 W90	5983	21	2		0048	10.31		5.82	120		
PIRCULI	08	0649	0752	D	S09 E51	5997	63	1	2	0705	1.37	2.19		54		
	09	1050	1106	D	N22 W42	5991	16	1	2	1104	1.19	1.83		50		
ALMA ATA	11	0753	0805	D	S13 E36	5998	12	1	2	0755	1.65			56		
MITAKA	16	0222	0246		S09 W31	5998	24	1	1	0222	2.16	2.50	1.96	134		
PIRCULI	19	0730	0747	D	S04 E49	6005	17	1	1	0742	2.09	3.24		63		
MITAKA	20	0347	0459		N10 E90	6011	72	1	1	0400	3.93		3.75			
TASHKENT	25	0522	0600	0533	N18 E38	6011	38	1	2	0533	5.01	7.00				

SOLAR FLARES

JANUARY 1961

OBSERVATORY	DATE JAN 1961	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX PHASE	APPROX.					MATH- FLAGE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Ha	MAX. INT. % _{fo}
					LAT.	MER. DIST.										
PIRCULI	25	0825 E	0844 D	0827 U	N09 E80	6013	19 D	1	2	0827	1.19	6.06		54	S-SWF	
	26	1038	1045	1043 U	N10 E60	6013	7	1	2	1043	1.73	3.70		53		
HUANCAYO	27	1739 E	1748	1741	N08 E42	6013	9 D	1	2	1741	2.00	2.70	2.20		S-SWF	
MEUDON	28	1045	1058	1047	N09 E32	6013	13	1	2							
{ KIEV CAPRI G MEUDON	29	1004 E	1012 D	1008	N17 E14	6013	8 D	1	2		1.55			68	S-SWF	
	29	1008 E	1012		N13 E19	6013	4 D	1	2		3.00					
	29	1517	1533	1523	N09 E19	6013	16	1								
VOROSHILOV	30	0159	0212	0201	N10 E13	6013	13	1+	2		3.59			88	S-SWF	
SIMEIZ	30	0629	0645	0631	N11 E10	6013	16	1+	3	0631	3.15			129		
GOOD HOPE	30	1424	1440	1425	N12 E05	6013	16	1		1425	2.40	2.50				
HUANCAYO	30	2000	2013	2004	N12 E03	6013	13	1	2	2005	2.00	2.10	5.00		S-SWF	
MITAKA	31	0337	0348		N05 W05	6013	11	1	1	0337	1.47	1.58	2.29	120		
PIRCULI	31	0743	0802	0754	N12 W05	6013	19	1	3	0754	2.09	2.26		58	S-SWF	
MEUDON	31	1500	1518	1507	N09 W09	6013	18	1								
OTTAWA	31	1511	1531	1513	N11 W11	6013	20	1		1513	2.70	2.70				

COMMENCE - STANDARDS - BOULDER

These flare reports are addenda to the January 1961 flares published in CRPL-F 198 Part B, February 1961

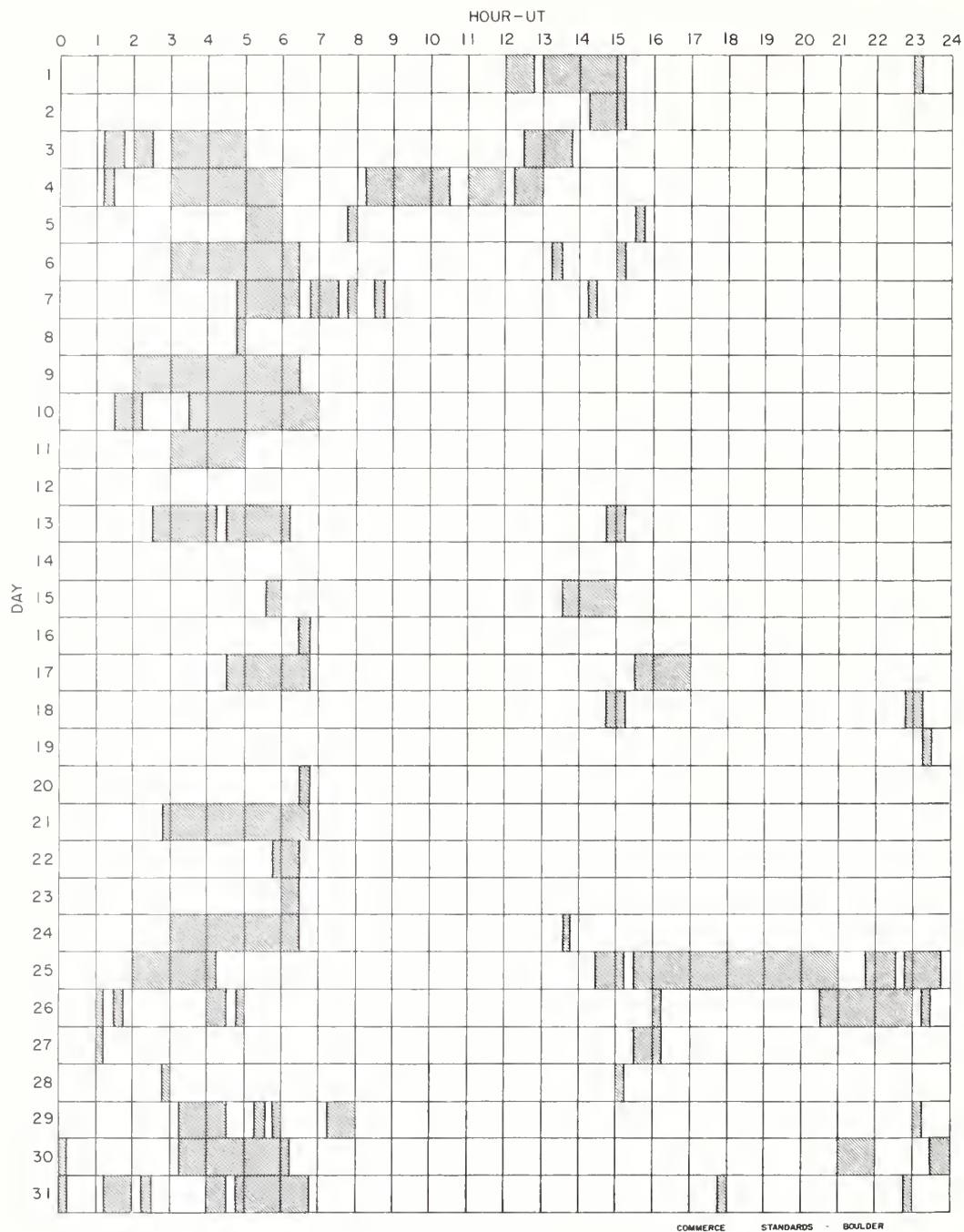
E = LESS THAN	CAPRI G	ANACAPRI - GERMAN	MCNATH	MCNATH-HULBERT
D = GREATER THAN	CAPRI S	ANACAPRI - SWEDISH	MOSCOM-G	MOSCOM - GAISH
U = APPROXIMATE	GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE	R O HERST	ROYAL GREENWICH OBSERVATORY,
□ = NOT REPORTED	KIEV*	KIEV UNIVERSITY		HERSTMONCEUX
	KODAIKANAL	KODAIKANAL	SAC PEAK	SACRAMENTO PEAK
	KRASNYA	KRASNYA PAKHRA	SCHAUINS	SCHAUINSLAND
	LOCKHEED	LOS ANGELES	WENDEL	WENDELSTEIN

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1960 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SAC PEAK.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JANUARY 1961



Stations Include:

Alma Ata	Hawaii	Krasnaya Pakhra	Mitaka	Sacramento Peak
Anacapri (Swedish)	Huancayo	Kyoto	Ondrejov	Simeiz
Arcetri	Istanbul	Lockheed	Ottawa	Tashkent
Climax	Kiev GAO	McMath-Hulbert	Pirculi	Uccle
Good Hope	Kharkov	Meudon	Royal Greenwich Observatory	Voroshilov
			Herstmonceux	Wendelstein

Errata:

The following footnote should have been included with the chart "Intervals of No Flare Patrol" for December 1960 published in CRPL-F 200 for April 1961, page III h.

Stations Include:

Abastumani	Good Hope	Kiev GAO	Moscow-Gaish	Sacramento Peak
Alma Ata	Hawaii	Lockheed	Ondrejov	Simeiz
Anacapri (Swedish)	Huancayo	McMath-Hulbert	Pirculi	Tashkent
Arcetri	Istanbul	Meudon	Royal Greenwich Observatory	Uccle
Climax	Kodaikanal	Mitaka	Herstmonceux	Voroshilov
				Wendelstein

SOLAR FLARES

MAY DECEMBER 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX. PHASE	APPROX.					MATH- PLACE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Ho	MAX. INT. %
					LAT.	MER. DIST.										
1960																
KYOTO	Max 23	2245	2310 D	N12	E18	5669	25 D	1			5.16			110	S-SWF	
KYOTO	June 06	0457 E	0520 D	N08	E10	5688	23 D	1			1.44			110		
KYOTO	08	2350 E	0145 D	S10	E90	5695	115 D	1				3.02	100			
KYOTO	20	0522	0545 D	S12	W60	5695	23 D	1+			2.89	2.27	130			
KYOTO	July 11	0400 E	0450 D	S17	W67	5734	50 D	1			1.44		100			
KYOTO	14	0600 E	0620 D	N15	W51	5740	20 D	1			2.27		90			
KYOTO	17	0209 E	0228 D	N20	W02	5749	19 D	1+			3.71	1.49	120			
KYOTO	19	0430	0435	N20	W26	5749	5	1			4.13					
KYOTO	20	0520 E	0555 D	N20	W37	5749	35 D	1			2.89		100			
KYOTO	22	0051 E	0105 D	N12	W45	5752	14 D	1			11.34	1.00	100			
KYOTO	28	0204 E	0215	N26	E26	5774	11 D	1			1.03	1.00	100			
KYOTO	28	0232	0238 D	S11	W68	5764	6 D	1			5.36	1.16	100			
KYOTO	29	0144 E	0155 D	N07	E20	5775	11 D	1			4.33	1.32	110			
KYOTO	29	0408 E	0430 D	S10	W80	5764	22 D	1			1.44		90			
KYOTO	29	0523	0546 D	S10	W80	5764	23 D	1			1.65	1.00	100			
KYOTO	31	0500	0505 D	N09	W12	5775	5 D	1			3.30	1.32	120			
KYOTO	Aug 01	0007	0014 D	N08	W17	5775	7 D	1					100			
KYOTO	02	0037	0045	N09	W22	5775	8	2			4.13	1.16	120			
KYOTO	02	0525 E	0530 D	N06	W24	5775	5 D	1			1.44		80			
KYOTO	08	0450 E	0525 D	N19	E72	5794	35 D	1			2.68		100			
KYOTO	18	0142 E	0215 D	N16	E25	5802	33 D	1+			4.33	1.32	130			
KYOTO	18	0423 E	0450 D	S09	E10	5801	27 D	1			0.430		100			
KYOTO	18	0425 E	0505 D	N19	W59	5794	40 D	1+			4.95		120			
KYOTO	18	0615 E	0649 D	S09	W28	5798	34 D	2			7.22	1.50	130			
KYOTO	18	0649		S10	E07	5801		1			3.09		120			
KYOTO	20	0409 E	0416 D	S14	W68	5798	7 D	1			3.09	1.33	80			
KYOTO	26	0450 E	0545 D	S05	W35	5809	55 D	1			2.89		100			
KYOTO	Sept 02	0021 E	0025 D	N18	W18	5822	4 D	1			3.09		110			
KYOTO	02	0140 E	0210 D	N18	W18	5822	30 D	1			4.33		90			
KYOTO	03	2353	0016 D	N16	W90	5818	23 D	1					100			
KYOTO	21	0133	0145 D	S13	E62	5863	12 D	1+				1.66	120			
											1.65					

SOLAR FLARES

MAY DECEMBER 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX PHASE	APPROX.					MEAS AREA Sq. Deg.	CORR AREA Sq. Deg.	MAX. WIDTH Ha	MAX INT. %			
					LAT.	MER. DIST.										
	1960															
KYOTO	26 Oct	0535 E	0603		S20 W58	5858	28 D	2		0535	4*95		2*34	150	Slow S-SWF	
KYOTO	12	0218 E	0230		S15 W44	5880	12 D	1+		0218	4*33		1*68	120		
KYOTO	13	0526	0532 D		S15 E38	5893	6 D	1		0526	3*71			100		
KYOTO	19	0030 E	0110 D	0055	N18 E28	5901	40 D	1		0055	2*48		1*51	110		
KYOTO	19	0549	0606 D		N18 E25	5901	17 D	1		0550	3*30		1*66	120		
KYOTO	20	0205 E	0235		N18 E15	5901	30 D	1		0210	2*27		1*00	90		
KYOTO	26	0109	0114 D		N20 E68	5909	5 D	1		0110	1*44			100		
KYOTO	Nov 06	0523	0533 D		N22 E76	5925	10 D	1+		0523	2*68		2*68	120		
KYOTO	14	0018	0046 D		N26 W20	5925	28 D	2		0018	9*28		2*34	120		Slow S-SWF
KYOTO	15	0034			N27 W35	5925		1		0034	1*03			110		
KYOTO	21	0007	0014 D		N06 W53	5932	7 D	1		0007				100		
KYOTO	21 Dec	0014 E	0020 D	0016	N19 W35	5932	6 D	1		0016	2*06		1*66	100		
KYOTO	02	0551 E	0608 D		N15 W23	5948	17 D	1		0551	2*89		1*66	100		
KYOTO	08	0045 E	0104 D		S08 W58	5953	19 D	1		0045	2*06			120		
KYOTO	21	0141 E	0152 D		S21 W05	5973	11 D	1		0141	1*44			100		

These flares are addenda to the May thru December 1960 flares published in CRPL-F 191 July 1960 thru CRPL-F 200 Part B for April 1961.

COMMENCE - STANDARDS - BOLDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

IIIj

(SHORT-WAVE RADIO FADEOUTS)

MARCH 1961

Mar. 1961	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 200
26	1019	1100	S-SWF	5	3	DA, JU, <u>NE</u> , PU, SW, CW***	1009E

DA = Darmstadt, G.F.R.

JU = Juhlesruh, G.D.R.

NE = Nederhorst den Berg, Netherlands

PU = Prague, Czechoslovakia

SW = Enköping, Sweden

CW*** = Cable and Wireless, Somerton, England

CW*** = Cable and Wireless, Brentwood, England

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

(Sudden Cosmic Noise Absorption
Sudden Enhancements Of Atmospherics
Solar Noise Bursts At 18 Mc.)

MARCH 1961

Mar. 1961	CLASS			WIDESPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
18			1	1	1724		1730		BO
18			1	5	1728		1748		BO, MC, RE
18		1		3	1740	1743	1755		AL, A3
22			1	4	1751		1754		BO, MC
24			1	5	1300		2300		BO, HA, MC (Noise Storm)
25			1	5	1300		2300		BO, HA, MC (Noise Storm)
26		2+		3	1019	1037	1127		DU, NE

COMMERCE - STANDARDS - BOULDER

NE = Nederhorst den Berg, Netherlands.

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

APRIL 1961

OTTAWA

2800 MC

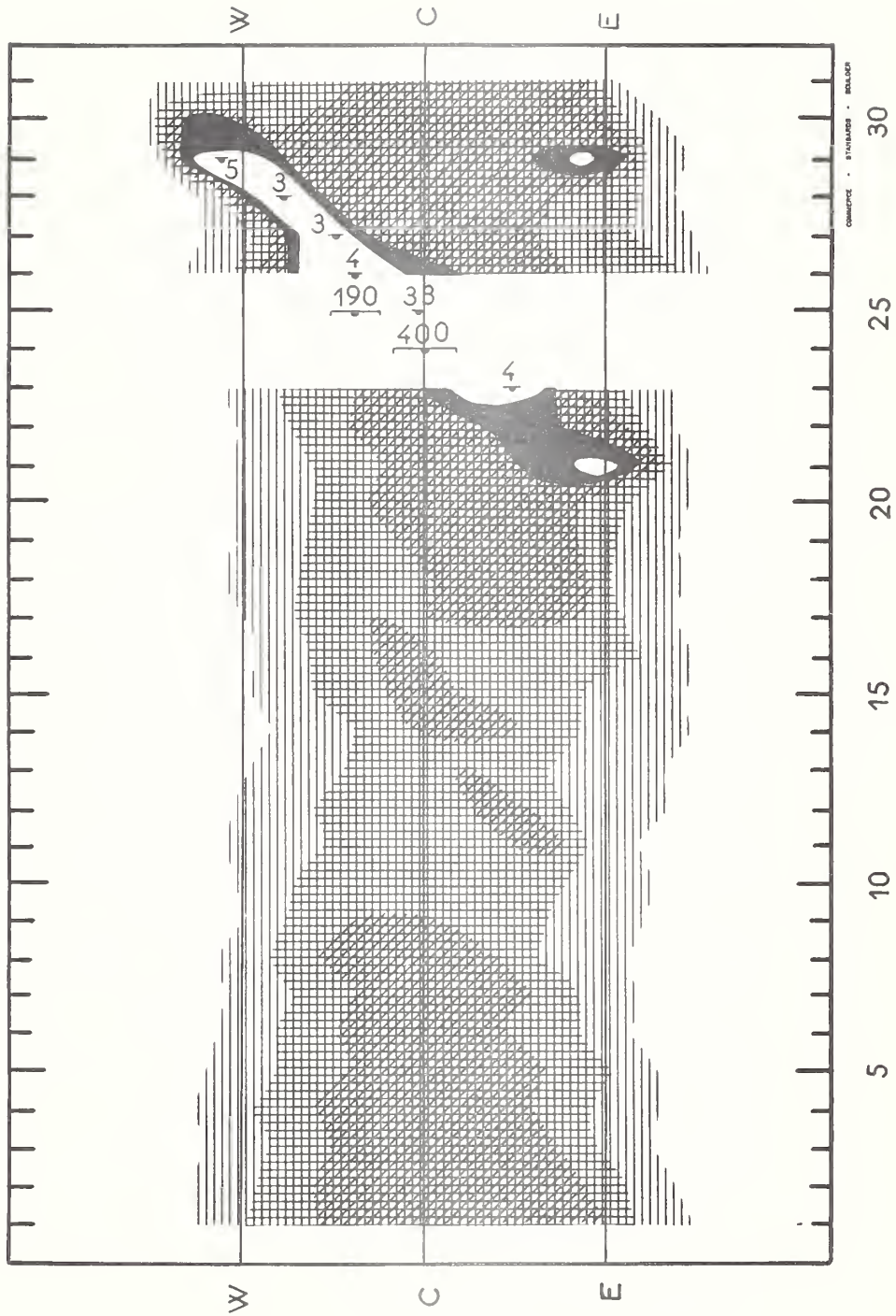
Apr. 1961	Type	Start UT	Duration Hrs:Mins	Maximum		Mean Flux	Remarks
				Time UT	Peak Flux		
3	2 Simple 2 f	1711	1.5	1711.8	35	8	
4	8 Group (2)	1412.5	16.5				
	2 Simple 2 f	1412.5	3	1413.3	14	5	
	2 Simple 2 f	1421	8	1422.8	12	5	
4	6 Complex f	2232.5	11	2237.7	25	8	
5	6 Complex	1623.5	4	1625.5	14	7	
5	3 Simple 3 A	2056	45	Indet.	3	1.5	
	2 Simple 2 f	2101.8	8	2104	105	22	
6	3 Simple 3	1747	1 40	1753	4	2.2	
6	3 Simple 3 A	2130	1 00	Indet.	3	2	
	1 Simple 1	2132	1.5	2132.7	4	2	
10	2 Simple 2 f	1829	5	1831	14	7.3	
4	Post Increase		15		1.8	.8	
10	1 Simple 1	1925.5	1	1925.8	3	1.3	
11	3 Simple 3 A	1808	1 00	1810.5	4	1.5	
	1 Simple 1	1819.5	2	1820	3	1.5	
24	3 Simple 3 A	1714	40	Indet.	2.1	1	
	1 Simple 1	1723.3	1.4	1724.3	6.2	1.7	
24	2 Simple 2 f	2227	5.5	2230	9.3	3.5	
25	2 Simple 2	1204.5	3.5	1206.3	11.7	5	
	4 Post Increase		11.5		2.9	1.7	
25	1 Simple 1	1739	1.7	1740	2	1	
25	2 Simple 2	2007.3	2.4	2008.2	10.7	4	
25	1 Simple 1	2028.5	2.5	2029.5	2	1	
25	1 Simple 1	2206	1.5	2206.4	2.7	2	
26	3 Simple 3 f	1247	1 13	1250	8	4	
26	9 Precursor	1418	8.5		3.5	2	
26	2 Simple 2 f	1426.5	9.5	1432	28.4	18.9	
	4 Post Increase		1 51		13.7	5.9	
26	3 Simple 3 A	1640	3 57	Indet.	32	11.3	
	6 Complex	1656.8	8	1702	18.3	9.6	
27	7 Period of irregular activity	1600	4 10		5.1	2.4	
27	1 Simple 1	1934.3	1	1934.7	3.8	3	
27	1 Simple 1	2255	.5	2255.3	7.1	4.7	
28	3 Simple 3 A	1205	30	Indet.	5.3	2.2	
	2 Simple 2	1211.7	2.3	1212.9	8.9	5.1	
28	1 Simple 1	2245.3	.7	2245.7	5.2	3	
30	2 Simple 2 f	1444	4.3	1447	10.6	5.7	
	4 Post Increase		42.7		4.6	2.5	

SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATIONS

Nancay

MARCH 1961

169 Mc



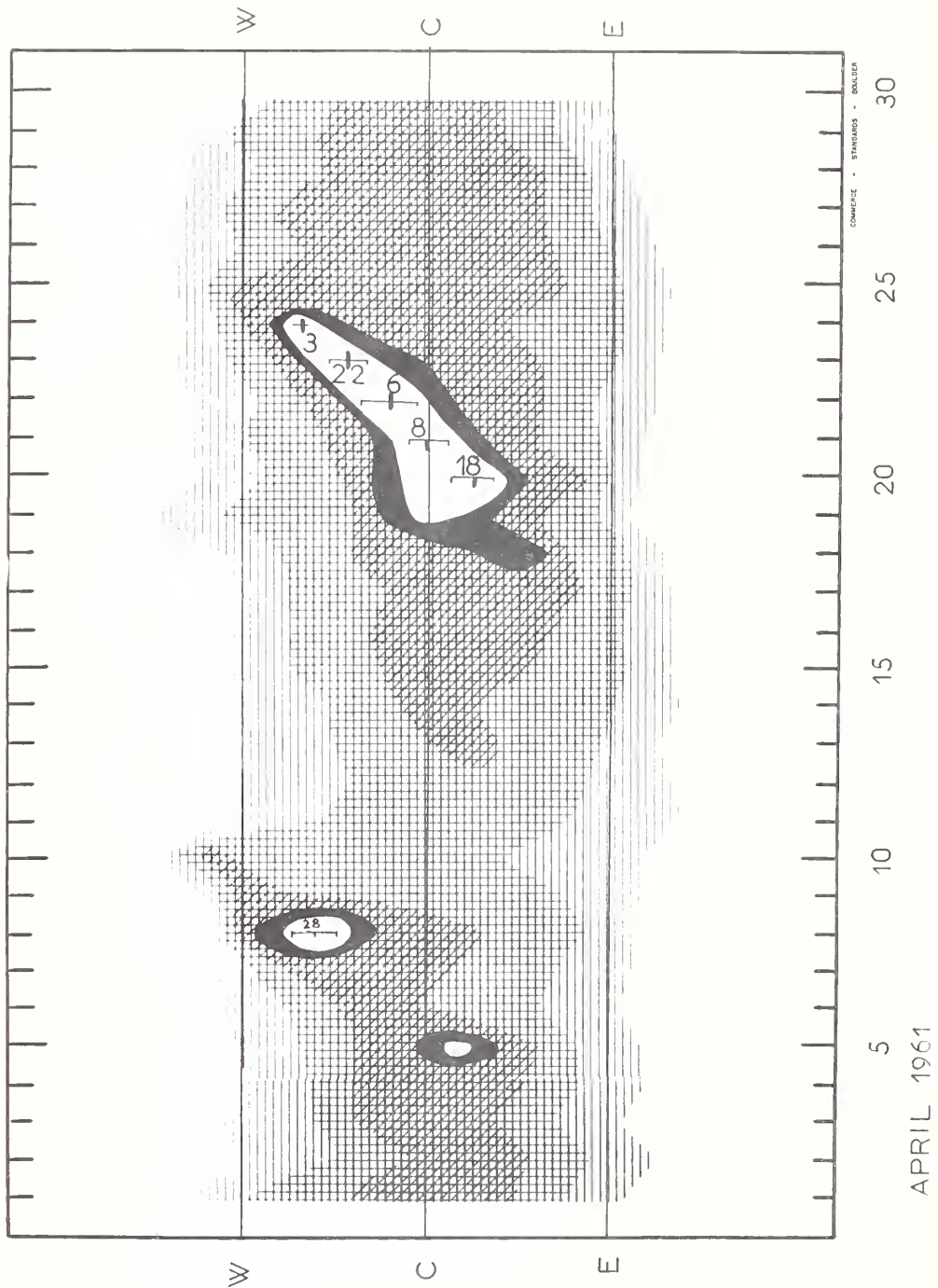
MARCH 1961

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

Nancay

APRIL 1961

169 Mc



SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

IVd

APRIL 1961

BOULDER

108 Mc.

Apr. 1961	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity	Apr. 1961	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	3	1754.5	1755.0	0.7	2	14	3	1705.5	1705.6	0.3	2
2	3	1752.2	1752.4	0.5	2	14	3	2112.3	2112.6	1.6	2
2	3	2253.6	2254.0	0.4	2	15	3	1416.0	1416.1	0.2	2
3	3	0014.5	0014.6	0.5	2	15	3	1424.0	1424.1	0.2	2
3	3	1751.2	1751.9	0.7	2	15	3	1624.9	1625.0	0.2	2
3	3	2344.2	2344.6	0.6	2	15	3	1743.2	1743.3	0.7	2
4	3	0042.0	0042.3	0.5	2	15	3	1921.7	1922.0	0.5	2
4	3	1301.8	1302.2	0.5	2	16	3	1614.4	1614.7	0.6	2
4	3	2336.5	2337.1	0.7	2	16	3	1700.8	1701.2	0.4	3
5	3	1603.7	1604.2	0.7	2	16	3	2037.5	2037.7	0.5	2
5	3	1815.2	1816.0	1.0	2	17	3	1254.5	1255.2	0.8	2
5	3	1957.8	1958.4	0.7	2	17	3	1326.5	1327.0	0.6	2
5	2	2059.0	2059.9	9	2	17	3	1603.2	1603.6	0.4	2
5	3	2235.1	2236.0	0.8	3	17	3	1918.0	1918.0	0.3	2
6	8	0016.6	0020.0	6.0	3	17	3	2340.3	2341.0	1.5	2
6	2	1536.0	1537.5	6	2	18	3	1230.6	1231.3	0.5	3
6	3	1650.4	1650.6	0.3	2	18	3	1321.5	1322.5	0.7	3
7	3	0037.0	0037.2	0.3	2	18	3	1357.0	1357.4	0.5	2
7	3	1803.8	1803.9	0.6	2	18	3	1418.2	1418.6	0.4	2
7	3	2330.5	2330.9	0.5	2	18	3	1440.1	1440.6	0.5	2
8	3	1526.6	1527.1	0.5	3	18	2	1649.0	1649.4	0.5	2
8	3	1946.4	1946.9	0.5	2	18	7	1838		62	1
8	3	2046.3	2046.6	0.3	2	18	7	2145		43	1
8	3	2120.2	2120.8	0.6	2	19	3	1241.0	1241.5	1.0	2
9	3	1646.5	1647.0	1.0	2	19	3	1246.0	1246.7	0.8	2
9	3	2004.5	2004.6	0.3	2	19	3	1327.0	1327.3	0.8	2
9	3	2104.5	2104.9	0.4	2	19	2	1331.7	1335.1	6	2
9	3	2242.2	2242.4	0.3	2	19	7	1745		92	1
10	3	1925.1	1926.5	1.5	3	19	7	2353		45	1
11	3	1302.9	1303.0	0.3	2	20	2	1226.2	1228.3	2.2	2
11	3	1307.6	1308.0	0.4	2	20	2	1254.9	1255.1	0.4	2
11	3	1336.5	1337.0	1.2	2	20	3	1309.9	1310.1	0.3	2
11	3	1438.6	1439.0	0.4	2	20	3	1313.3	1313.8	0.4	2
11	3	2038.3	2038.6	0.3	2	20	3	1331.6	1332.0	0.4	2
12	3	1316.0	1316.4	0.4	3	20	3	1351.6	1352.1	0.5	3
12	3	1532.6	1533.2	1.0	2	20	3	1413.3	1413.9	0.5	3
12	3	1630.5	1631.4	1.3	2	20	3	1559.4	1559.6	0.3	2
12	3	1651.9	1652.5	0.6	3	20	3	1700.9	1701.3	1.0	2
12	3	1717.6	1718.2	0.6	3	20	3	1828.5	1828.9	1.0	2
12	3	1726.9	1727.2	0.5	2	20	7	2131		104	1
12	3	2123.5	2123.9	0.4	2	21	7	0012		63	2
12	3	2221.2	2221.8	0.9	3	21	3	1239.7	1240.1	1.1	2
13	3	1255.6	1256.1	0.5	2	21	3	1247.2	1248.2	1.5	2
13	3	1303.7	1304.0	0.4	3	21	3	1300.1	1301.8	1.8	2
13	3	1327.4	1327.8	0.5	2	21	3	1319.7	1320.1	0.5	2
13	3	1339.1	1339.8	1.2	2	21	3	1324.6	1325.1	0.6	2
13	3	1416.7	1417.0	0.6	2	21	3	1559.0	1559.1	0.7	2
13	3	1505.5	1505.9	0.5	2	21	3	1721.0	1721.5	0.5	2
13	3	1509.2	1509.6	0.9	2	21	3	1813.0	1813.4	0.5	2
13	3	1846.2	1846.5	0.4	2	21	3	1816.5	1817.0	0.5	2
13	3	2339.8	2340.1	0.5	2	21	3	2201.5	2201.9	0.5	3
14	3	1254.7	1255.0	0.8	2	22	3	0014.5	0015.0	0.5	2
14	3	1312.0	1312.2	0.3	2	22	3	1338.9	1339.3	0.6	2
14	3	1333.0	1333.1	0.3	2	22	3	1349.0	1349.4	0.5	2
14	3	1451.5	1451.6	0.3	2	22	3	1547.5	1548.4	1.9	2

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

APRIL 1961

BOULDER

108 Mc.

Apr. 1961	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
22	3	1558.3	1559.2	1.1	3
22	3	1605.5	1606.0	0.5	2
22	2	1621.0	1623.0	3.0	2
22	3	1630.6	1631.4	0.8	2
22	3	1714.2	1715.0	1.0	2
22	3	1826.2	1826.5	0.6	2
22	3	1902.8	1903.3	0.5	2
22	3	2320.8	2321.4	0.6	3
23	3	1715.6	1716.2	0.8	2
23	3	1729.5	1729.9	0.5	2
23	3	1856.8	1857.0	0.4	2
23	3	1900.5	1901.0	0.5	3
24	3	1240.0	1240.4	0.6	2
24	3	1413.5	1413.9	0.6	2
24	3	1603.0	1604.0	1.1	2
24	3	1724.2	1726.0	2.0	2
24	3	1845.6	1846.0	0.5	2
24	3	1935.0	1935.6	0.7	2
24	3	2346.0	2346.5	0.5	2
25	3	1234.7	1235.0	0.4	2
25	3	1317.1	1317.5	0.4	2
25	3	1423.3	1423.8	0.6	2
25	3	1636.2	1636.9	0.7	2
25	3	1651.5	1652.1	0.6	2
25	3	2044.2	2044.5	0.5	2
26	3	0001.0	0001.5	0.6	2
26	3	1219.5	1220.6	1.2	2
26	3	1307.5	1307.9	0.4	2
26	3	1321.0	1321.5	0.5	2
26	3	1339.0	1339.8	0.8	3

	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
26	3	1647.5	1648.0	0.6	2
27	3	1301.2	1301.8	0.6	3
27	3	1316.2	1316.6	0.6	2
27	3	1328.0	1329.2	1.2	3
27	3	1916.0	1916.5	0.5	2
28	3	1303.5	1303.9	0.5	2
28	3	1342.3	1342.9	0.6	3
28	3	1346.5	1346.9	0.5	2
28	3	1507.6	1508.0	0.5	2
28	3	1533.7	1534.4	0.7	2
28	3	1646.4	1647.0	0.6	2
28	3	1733.4	1733.9	0.5	2
28	3	1945.1	1946.0	0.9	2
29	3	0003.2	0003.5	0.5	2
29	3	1333.0	1333.6	0.6	3
29	3	1336.0	1336.5	0.5	3
29	3	1348.4	1348.9	0.5	3
29	3	1530.4	1530.8	0.7	2
29	3	1634.5	1635.5	1.0	3
29	3	1709.8	1710.1	0.4	2
29	3	1755.5	1756.3	0.9	2
29	3	1823.6	1824.0	0.5	2
29	3	1839.4	1841.2	2.0	2
29	3	2217.7	2218.4	0.7	3
30	3	1538.0	1538.6	0.6	2
30	3	1602.1	1602.6	0.5	2
30	3	1729.5	1730.0	0.5	2
30	3	1810.5	1810.7	0.5	2
30	3	1812.3	1812.6	0.5	2
30	3	1917.0	1917.5	0.5	2

COMMERCE - STANDARDS - BOULDER

NOMINAL TIMES OF OBSERVATION

APRIL 1961

BOULDER

108 MC

Apr. 1961	U.T.		Apr. 1961	U.T.
1	1251-2117		15	1229-0120
2	1516-0108		16	1227-0121
3	1247-0109		17	1226-0122
4	1246-0110		18	1224-0123
5	1431-0111		19	1223-0124
6	1243-0112		20	1221-0125
7	1241-0113		21	1220-0126
8	1240-0114		22	1219-0127
9	1238-0115		23	1217-0128
10	1236-0116	I 2008-2207	24	1216-0128
11	1235-0116		25	1214-0130
12	1233-0118		26	1213-0130
13	1232-0118		27	1212-0131
14	1230-1833;		28	1210-0132
	2006-0120		29	1209-0133
			30	1208-0134

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

IVf

FEBRUARY 1961

OWENS VALLEY, CALIFORNIA

500-1000 Mc

Date 1961	Observing Hours	Type	Important Bursts Times U.T.	Int.	Frequency Range	Remarks
Feb. 1	1634-2410					No activity
Feb. 2	1631-1953					No activity
Feb. 3	1650-2353					No activity
Feb. 6	1658-2350					No activity
Feb. 7	1639-1738					No activity
Feb. 7	1816-2331					No activity
Feb. 8	1757.5-1754.5 1757.5-2358.	I	2142	1-	950-1000	No activity 3 spots for 5 seconds Continuum
Feb. 9	1659-2106					No activity
Feb. 10	1755-2014					No activity
Feb. 14	1630-2422					No activity
Feb. 20	1656.5-2420					No activity

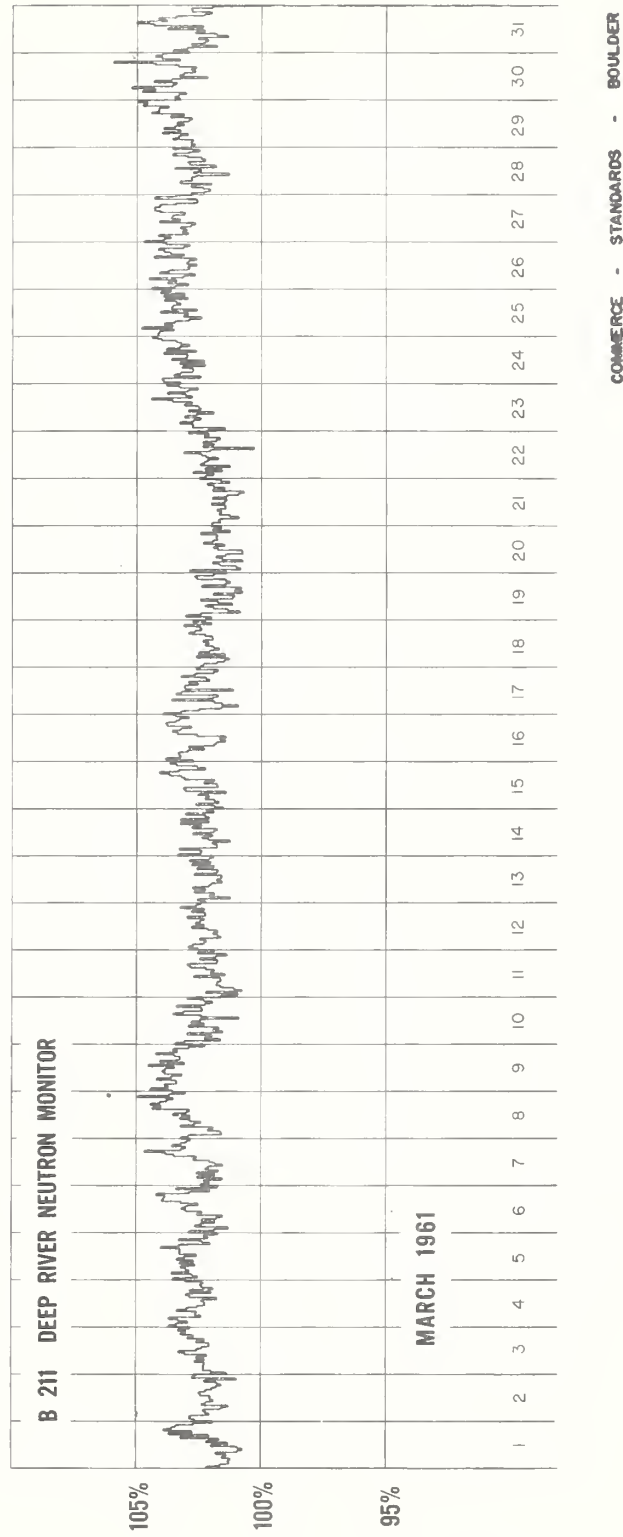
COMMERCE - STANDARDS - BOULDER

COSMIC RAY INDICES
(Climax Neutron Monitor)

Mar. 1961	Daily average counts/hr	Mar. 1961	Daily average counts/hr
1	2978.6	17	2992.7
2	2964.4	18	3000.2
3	2988.8	19	2978.4
4	2995.1	20	2982.2 (10)
5	3014.3 (31)	21	2959.1
6	3034.8	22	2967.7
7	3011.1	23	2984.0
8	3004.7	24	2994.0
9	2996.5	25	2997.0
10	2987.9	26	2998.0
11	2981.1	27	2984.6
12	2987.6	28	2954.4
13	2982.0	29	2965.8
14	2972.3	30	2959.3
15	2975.1	31	2930.3
16	2995.5		

COMMERCE - STANDARDS - BOULDER

COSMIC RAY INDICES (Pressure Corrected Hourly Totals)



GEOMAGNETIC ACTIVITY INDICES

MARCH 1961

Mar. 1961	C	Values Kp								Sum	Ap	Final Selected Days
		Three hour Gr. interval										
		1	2	3	4	5	6	7	8			
1	0.3	1+	3-	2o	2-	3+	0+	2-	2+	15+	8	Five Quiet
2	0.2	2+	3+	3-	2-	0+	1-	1+	2o	14+	8	
3	0.1	3o	1+	1+	1-	1o	1o	0+	0+	9o	5	
4	0.1	0o	0+	1-	1-	2+	1o	0o	0+	5+	3	
5	0.9	1o	2o	1o	1+	1-	1+	3+	6-	16+	14	
												7
6	1.3	7-	6o	4o	4+	4+	2-	1o	0+	28+	37	8
7	0.2	0o	0o	0+	1-	1o	1o	2-	2o	7-	3	25
8	0.2	2-	2-	1-	1-	1-	1o	1+	2+	10o	5	
9	0.9	2o	3-	3-	1o	3+	3o	3o	4-	21+	13	
10	1.4	4o	5-	6+	7o	5o	3o	2-	1+	33o	46	
11	0.3	1-	1+	2-	2-	2o	2-	2+	1o	12+	6	Five Disturbed
12	0.2	3+	1-	1o	2o	2-	1-	1-	2+	12+	7	
13	0.4	3o	2o	3o	2-	2o	3o	2-	2-	18o	10	
14	1.2	4+	5-	4+	4o	3+	4-	4o	2+	31-	26	
15	1.2	2o	4o	3-	4+	5o	3-	3o	5-	28+	24	
												14
16	1.1	5-	3+	5+	3o	3+	3-	1-	1-	24-	20	15
17	0.6	2+	2+	5-	4o	3-	2-	1o	1+	20o	14	19
18	0.8	2o	1+	1+	0+	3-	4-	4o	3o	18+	12	
19	1.3	2-	5o	6o	4-	5-	5+	4+	4-	34+	38	
20	0.9	4-	3o	3-	4o	4-	3-	4-	2o	25+	17	
21	0.6	3o	3+	2-	2o	1+	3o	3o	1o	18+	11	Ten Quiet
22	0.7	3-	4-	4+	3+	2+	2-	1-	0+	19o	13	
23	0.6	1o	3-	3-	2o	4-	2+	2o	1+	18-	10	
24	0.4	1+	2+	2-	3+	2+	2o	1+	2o	16+	8	
25	0.1	2-	0+	1-	1-	2+	1+	1o	1+	9+	5	
												3
26	0.5	1o	2+	3-	3o	2+	1+	1o	3o	17-	9	4
27	1.2	2o	2o	2+	3-	3-	6o	5-	2-	24o	22	7
28	1.0	4o	4+	4-	3o	3o	3-	2+	1-	24-	17	8
29	0.4	1-	1+	1o	2-	2+	1+	2+	1+	12o	6	11
30	0.6	3-	4o	4-	2-	2-	1+	1o	0+	16+	10	12
31	0.4	0+	1-	1-	1o	2-	3+	2o	2o	12-	6	25
												29
												31
Mean:	0.65									Mean:	14	

COMMERCE A- STANDARDS & BOULDER

DAYS IN SOLAR ROTATION INTERVAL

ROT. =

NR.

1744

Dec

1745

Jan

1746

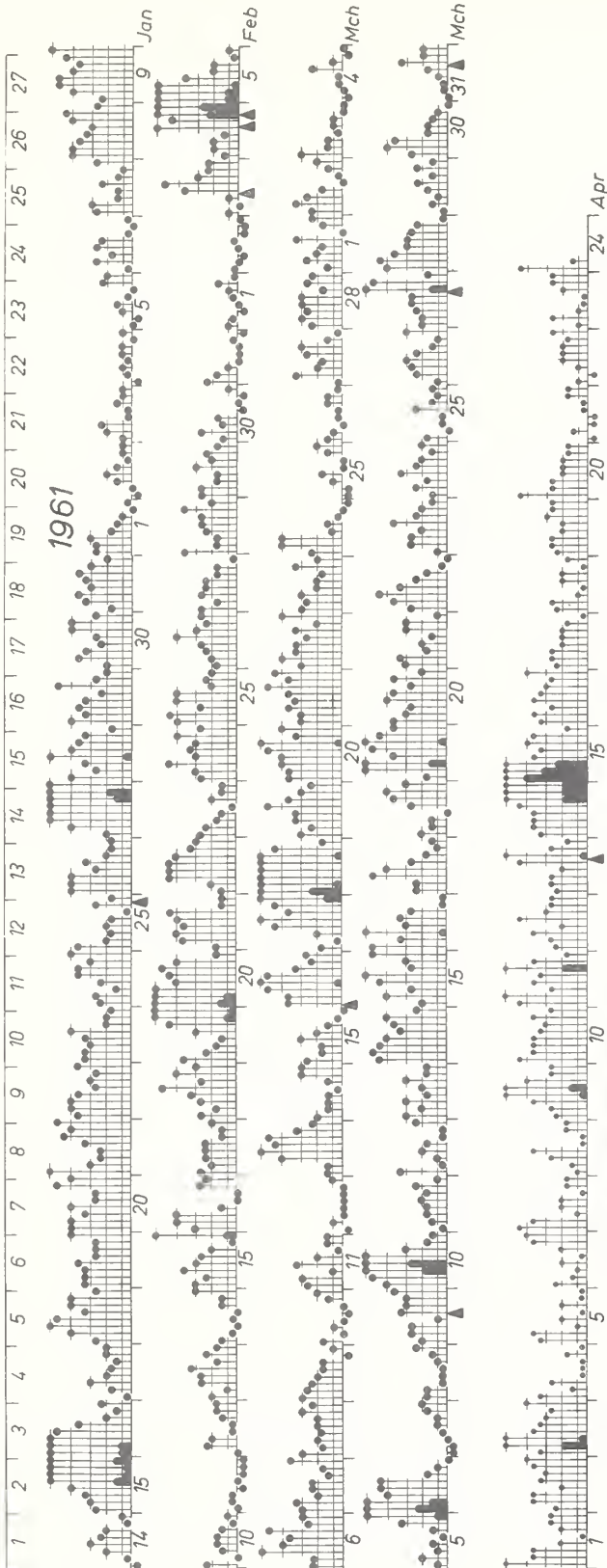
Feb

1747

Mch

1748

Apr



KEY



▲ = sudden commencement

PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 1961 March 31

(Ks from Wingst and Göttingen till April 24)

J.B.

COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
MARCH 1961

NORTH ATLANTIC

NORTH PACIFIC

DATE	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF				ADVANCE FORECASTS (J-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY				GEOMAGNETIC K _p		NORTH PACIFIC 12-HOURLY QUALITY FIGURES		SHORT-TERM FORECASTS ISSUED AT		WHOLE DAY INDEX		ADVANCE FORECASTS (J-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY		GEOMAGNETIC K _{SI}										
	00 06 12 18		24		00 06 12 18		24		00 06 12 18		24		00 06 12 18		24		00 06 12 18		24		00 06 12 18		24		00 06 12 18		24						
	00	06	12	18	00	06	12	18	00	06	12	18	00	06	12	18	00	06	12	18	00	06	12	18	00	06	12	18	00	06	12	18	
MAR 1961																																	
01	6- 50	7- 6+	6- 4	7 7	6 6	6 6	2 2	2 2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
02	6- 5-	7- 6+	6 5	7 7	6- 6	6 5	2 1	2 1	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
03	60 5+	7- 6+	6 5	7 6	60 5	6 5	1 1	1 1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
04	6+ 6-	70 7-	6 5	7 6	6+ 5	6 5	0 1	0 1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
05	6+ 60	7- 6-	6 6	7 7	6+ 5	6 6	1 3	1 3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
06	3- 3-	50 5-	5 2	5 5	5 5	5 5	(4) 2	(4) 2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
07	3- 3-	60 60	4 3	6 5	4 4	6 6	0 2	0 2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
08	60 5-	6+ 6+	4 4	6 6	6- 5	6 5	1 1	1 1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
09	6- 6-	60 6+	6 5	7 6	60 6	6 5	2 3	2 3	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
10	5+ 40	5- 5-	5 5	5 4	5- 6	6 6	(5) 3	(5) 3	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
11	3- 30	60 7-	4 3	6 5	4 4	6 6	1 2	1 2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
12	6- 5-	7- 7-	5 5	6 6	6- 5	6 6	2 2	2 2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
13	50 5-	6+ 6+	6 4	6 6	6- 4	6 6	3 2	3 2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
14	4+ 3+	5+ 4+	5 4	6 5	(4+) 5	5 5	(4) 3	(4) 3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
15	4- 3+	5+ 5+	3 3	5 4	(40) 4	4 4	3 3	3 3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
16	4+ 3-	6- 60	4 4	5 5	(4+) 4	4 4	(4) 2	(4) 2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
17	5+ 4-	6- 6-	5 4	5 5	5- 5	6 6	3 2	3 2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
18	6- 5-	6+ 6+	5 5	6 6	6- 4	6 6	1 3	1 3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
19	60 30	5+ 6-	5 3	5 4	(4+) 5	5 5	(4) 2	(4) 2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
20	5+ 3+	5+ 7-	4 4	5 5	5- 5	5 5	3 2	3 2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
21	60 4+	7- 6+	6 4	6 6	5+ 6	6 6	3 2	3 2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
22	6+ 40	6+ 6+	6 5	6 6	60 6	6 6	(4) 1	(4) 1	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
23	60 5+	6+ 6+	6 5	6 6	60 6	6 5	2 2	2 2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
24	60 50	7- 6+	6 5	6 6	60 6	6 5	3 2	3 2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
25	7- 6-	6+ 7-	6 5	7 6	6+ 6	6 6	1 2	1 2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
26	7- 6-	7- 7-	6 6	6 7	6+ 6	6 6	2 2	2 2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
27	7- 60	7- 7-	7 6	7 4	7- 6	6 6	2 (4)	2 (4)	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
28	50 40	6+ 7-	4 3	6 7	4 3	6 7	(4) 2	(4) 2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
29	6+ 60	70 6+	6 5	7 7	6+ 4	6 6	1 2	1 2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
30	6- 50	7- 7-	7 5	7 6	60 7	6 6	3 2	3 2	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
31	6+ 60	7- 7-	7 6	7 6	6+ 7	7 7	1 3	1 3	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

Score: Quiet Periods

14 11 22 12

P 9 12

10 7 9 14

S 13 11

U 0 0 2 2

F 1 0 0 0

Disturbed Periods

P 1 6 0 0 0

S 4 7 0 1

U 1 0 0 0

F 0 0 0 0

Score: Quiet Periods

P 14 11 22 12

9 12

13 13

7

Disturbed Periods

P 1 6 0 0

4 2

0 0

0

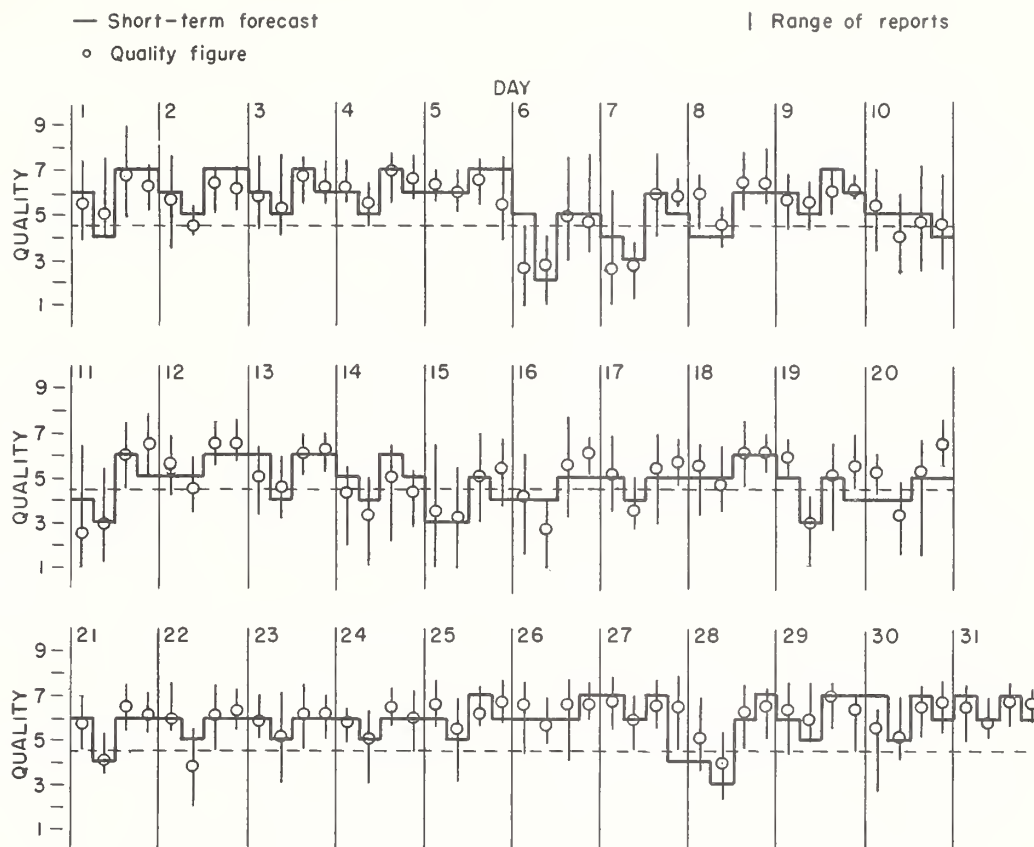
() Represent disturbed values.

All times are Universal Time (U.T.)

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS NORTH ATLANTIC

VII b

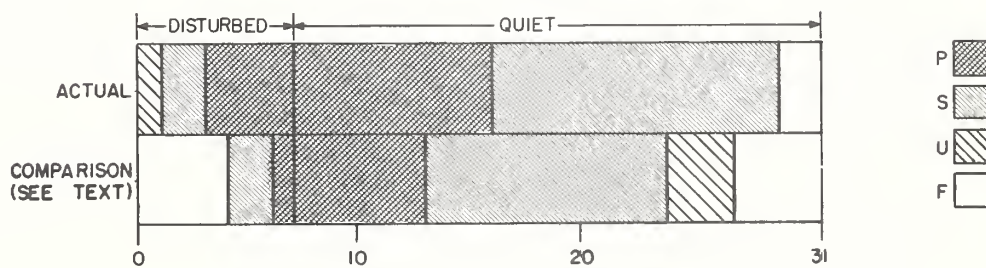
MARCH 1961



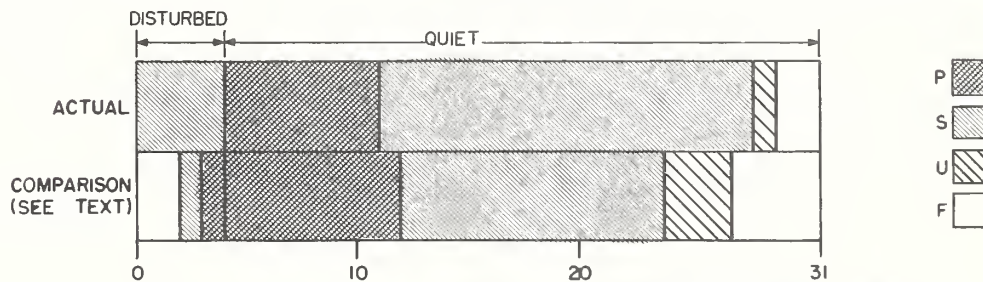
OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE

NORTH ATLANTIC

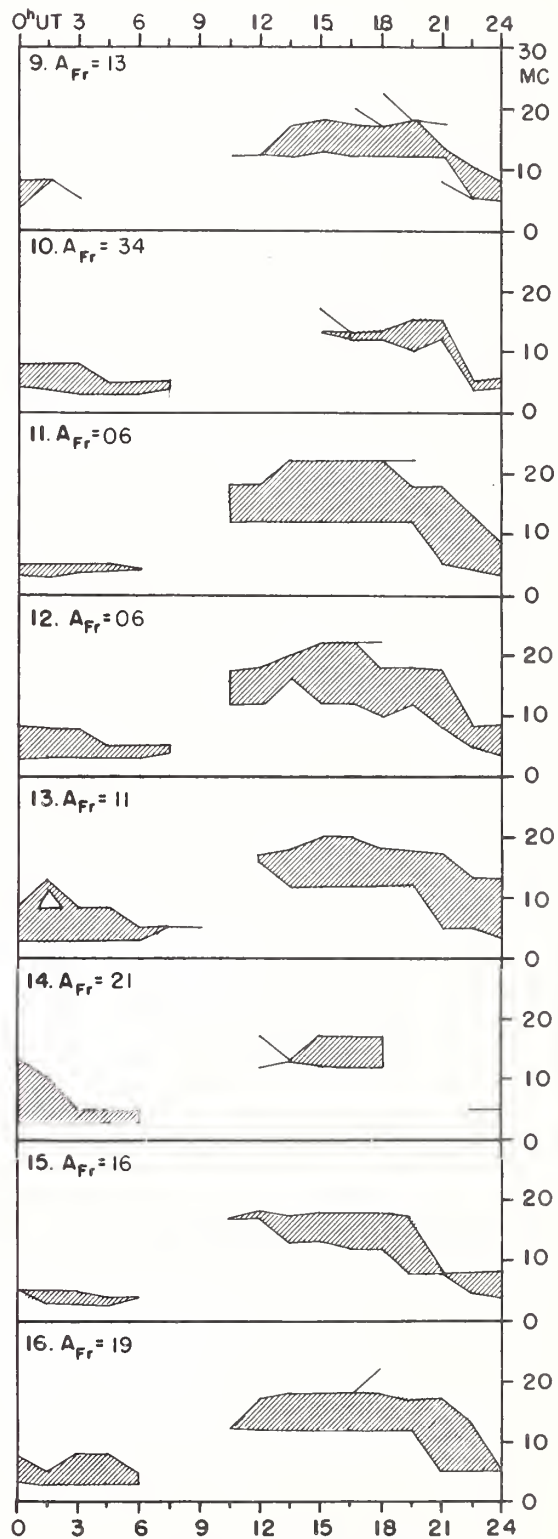
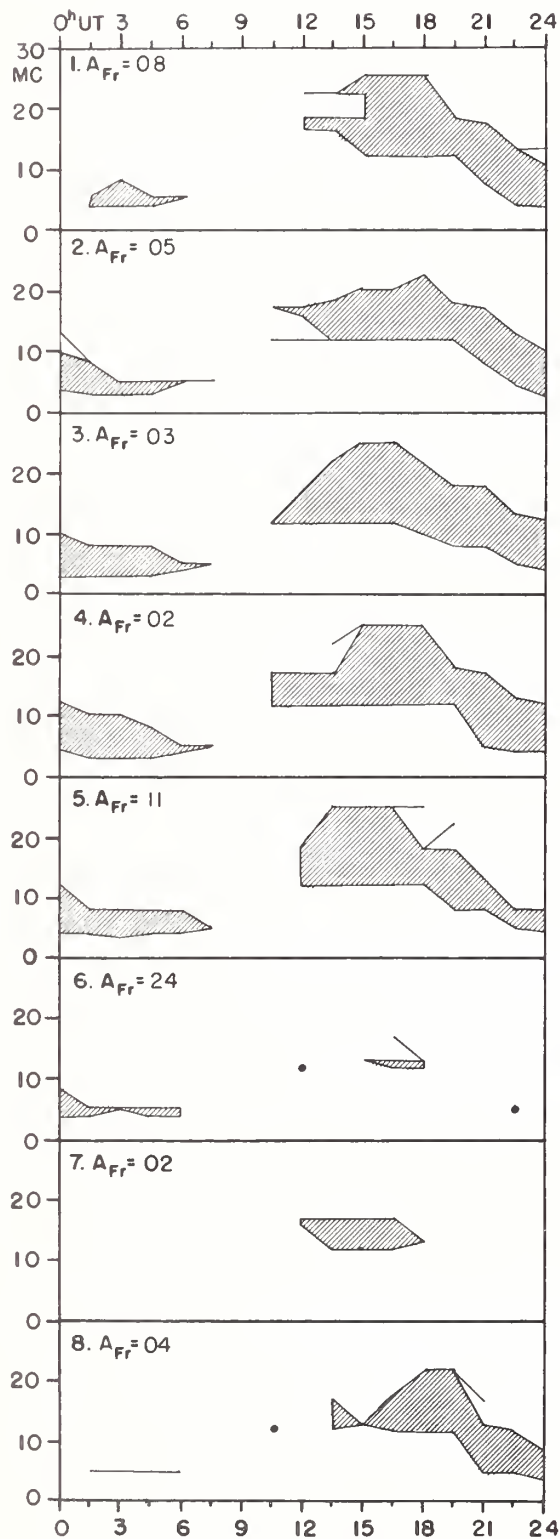


NORTH PACIFIC

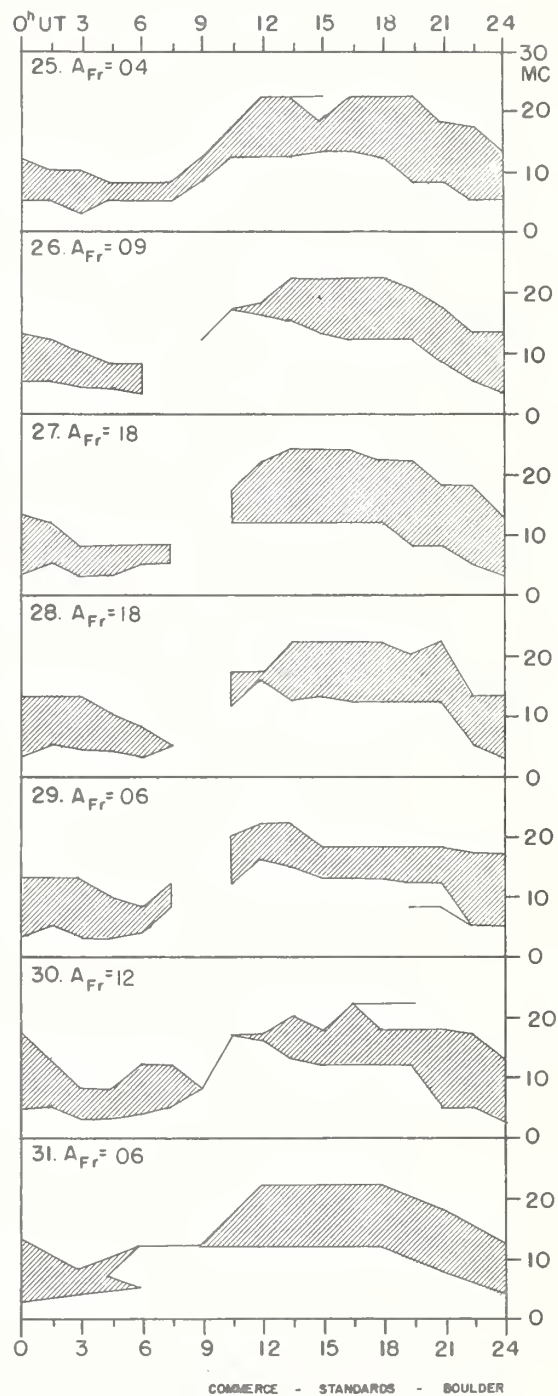
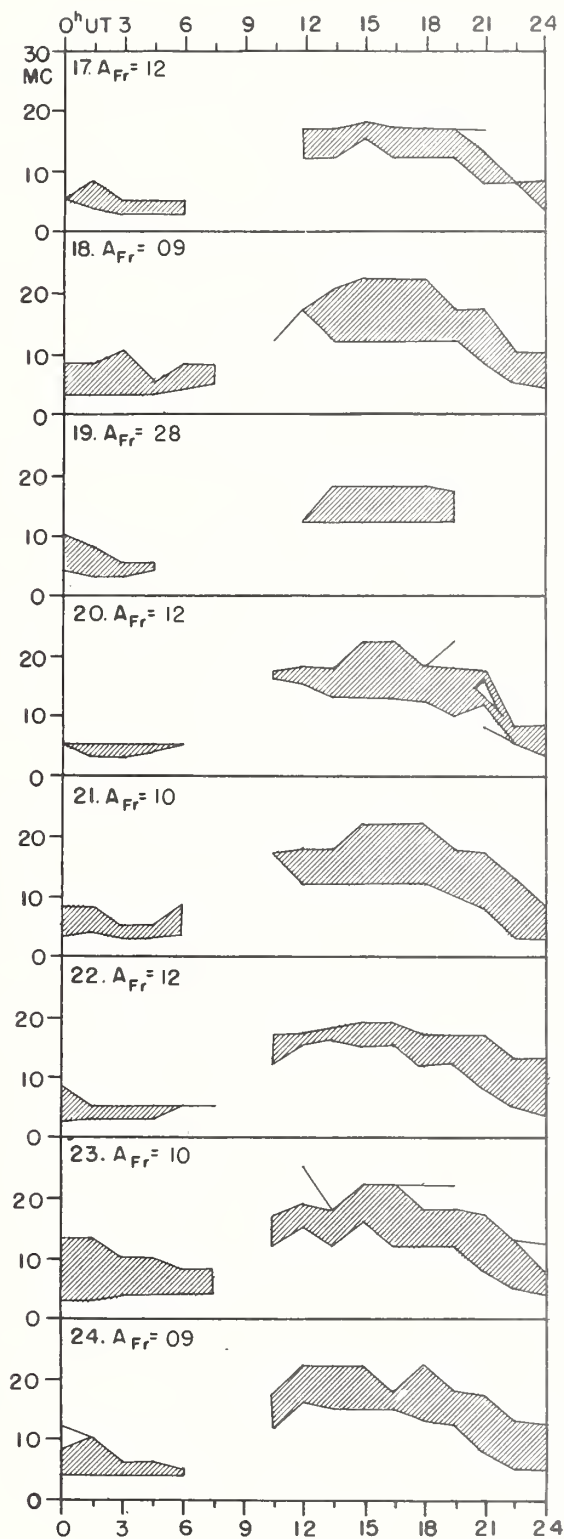


COMMERCE - STANDARDS - BOULDER

MARCH 1961



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ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

APRIL 1961

Issued Day/Time UT Apr. 1961	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
03/0410	Ft. Belvoir, Magnetic Storm 31/1338Z*			
03/1600		116	Magnetic Storm 02/20XXZ*	
09/1600		117	Magnetic Storm 09/07XXZ	
13/2030	Ft. Belvoir, Magnetic Storm 13/1452Z			
14/1600		118	Magnetic Storm 13/1452Z	
26/1945	Burbank, Solar Flare 26/1655Z			

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*Increase in geomagnetic activity was thought to be continuation of very minor disturbance which began March 31.
Further examination, however, indicated the beginning of a new disturbance April 02.

